Claims

1.   Multi-channel network node for routing/switching data from a number of input ports to a number of output ports, wherein said data is buffered in a memory unit before being passed to a destined output port, wherein said multi-channel network node comprises

said memory unit organized as a number of physical memory queues, each queue being assigned to an output port, and

a switching unit for routing said data from the input port to said memory queue which is assigned to the destined output port.

2.   Multi-channel network node according to claim 1, wherein each of said memory queues comprises a number of coherent memory cells.

3.   Multi-channel network node according to claim 2, wherein the number of memory cells is resizable in order to re-distribute buffer capacity of the memory queues.

4.   Multi-channel network node according to claim 1, wherein a re-assembly unit is coupled with said input ports of the network node and said switching unit and a segmentation unit are coupled with said memory unit and said output ports of the network node.

5.   Multi-channel network node according to claim 1, wherein each memory queue is assigned to a memory agent controlling the operation of the memory queue.

6.   Multi-channel network node according to claim 5, wherein said memory queues and said memory agents form said switching unit.

7.   Multi-channel network node according to claim 5 or 6, wherein said memory queues and said memory agents operate asynchronous and in parallel.

8.   Multi-channel network node according to claim 1, wherein said switching unit is a switch matrix.

9.   Multi-channel network node according to claim 1, wherein said switching unit is provided by a processor controlled by software.

10.   Multi-channel network node according to claim 1, wherein input and output interfaces are assigned to the input and output ports, respectively.

11.   Multi-channel network node according to claim 1, wherein burst buffers are provided.

12.   Multi-channel network node according to any of the preceding claims, wherein the output ports are output ports of the memory unit and are coupled with a switching unit.

13.   Multi-channel network node according to any of claims 1 to 11, wherein the output ports are the output ports of the network node.

14.   Method for routing/switching data from any input port to any of a number of output ports of a multi-channel network node, comprising the steps of:
       receiving data from a data channel by a receiver unit;
       queuing said data in a plurality of memory queues constituting a memory unit, and

switching/routing the data from the memory queues to the output port the respective memory queue is assigned to.

15.   Method according to claim 14, wherein each memory queue allocates coherent memory cells.

16.   Multi-channel routing/switching system comprising a network of interactive cascaded multi-channel network nodes as claimed in any of claims 1 through 13.